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U.S. DEPARTMENT OF AGRICULTURE - FOREST SERVICE
CALIFORNIA FOREST AND RANGE EXPERIMENT STATION
Division of Forest Insect Research

FOREST INSECT CONDITIONS
MENDOCINO NATIONAL FOREST
MARCH 1959
APPRAISAL SURVEY

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During the fall and winter of 1958 and 1959, the Station received several field detection reports of forest insect damage from the Mendocino National Forest. Each reported damage caused by pine engravers and the western pine beetle, and one requested an appraisal by a Station entomologist. Accordingly, R. E. Stevens accompanied J. L. Averell of the U.S. Forest Service Regional Office on a 3-day trip to appraise the infestations in several trouble spots and evaluate their biological significance. The survey was conducted during the period March 18-20. Stevens and Averell were assisted throughout the 3 days by Robert E. Lang, Timber Management specialist on the staff of the Mendocino, and on March 18 by Robert Martin, Project Sales Officer on the Stonyford District.

Insect and Host Species

The bark beetles responsible for the damage in ponderosa pine are the California five-spined engraver, Ips confusus (Lec.) and the western pine beetle, Dendroctonus brevicomis Lec. This is the primary problem involved.

Also observed were the Douglas-fir engraver, Scolytus unispinosus Lec., infesting Douglas-fir, and what is probably the silver-spotted tiger moth, Halisidota argentata Pack., feeding on the leaders and some laterals of Douglas-fir. Several sugar pines typical of those infested with the black pine-leaf scale, Aspidiotus californicus Colm., were also noted, but no specimens of this insect were collected.

Infestation Areas

Three current infestation areas were visited, in addition to a single potential trouble-spot that was burned in late 1958. Two of the current infestations are on the east side of the Forest, west of Stonyford. They are designated Letts Valley, in Sec. 24, T17N, R8W, MDM, and Goat Mtn., Sec. 8, T16N, R7W. The third area is on the west side of the Forest, northwest of Lake Pillsbury, in the Mill Creek drainage, Sec. 17 and 20, T19N, R11W.

Essentially all the land is in federal ownership, with a small amount of private land in the Goat Mtn. area. The timber type in each instance is predominantly ponderosa pine, and the age classes small and large young growth.

The burn referred to is known as the Boyd burn, and covered some 100 acres on the eastern shore of Lake Pillsbury in the fall of 1958. It adjoins a Forest Service summer home development.

Status of the Infestations

In each of the current infestations it appears that pine engravers built up in down material last spring, and subsequently attacked the tops of adjacent standing green trees. Western pine beetles then filled in below the engravers, ultimately killing the trees. Nearly all the western pine beetle brood is now in the late larval stage.

In the Goat Mtn. area, an earth slip during the winter of 1957-58 had blocked a road. Some slash resulted from clearing the road, and it was probably this that triggered the infestation. The weakened material in the slip provided attractive material for the second generation of engravers, and was then hit by the western pine beetle. There are an estimated 35 trees in this area, varying from 6" - 28" d.b.h. The trees are densely grouped over 30 acres. The western pine beetle broods are heavy, extending to within 3 or 4 feet of ground level. Some of the Ips top-kills have not filled in with the western pine beetle, but their occurrence overall is probably less than 1 in 5.

Much the same situation occurs in the Letts Valley infestation, except that here logging slash was evidently responsible for the buildup. Logging was done early in 1958, and some slash was piled over the summer, providing ideal Ips breeding material. There are in the neighborhood of 40 infested trees in this area, over 200-300 acres.

Slash is again incriminated in the Mill Creek infestation, although it did not appear to have been so heavily concentrated as in the Letts Valley area. One group of about 50 small trees was looked at closely, and a number of other groups of 5-10 trees were viewed from a distance. The stand and brood characteristics were the same as in the other areas. An estimated 120 trees are involved here, and they are scattered out over some 1,000 acres.

It was here also that the Douglas-fir engraver was noted, infesting several trees around the 50-tree group of pine referred to in the preceding paragraph. There was evidence of some past loss in the area from the Douglas-fir engraver, several 8" - 10" d.b.h. snags being observed. The Douglas-fir engraver has been very active in southern Humboldt and northern Mendocino Counties this past fall, but generally speaking is not an important insect.

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Activity of what is presumed to be the silver-spotted tiger moth was observed scattered throughout the Mill Creek-Lake Pillsbury area. A subsequent collection has been received from the Stonyford area, and prior collections had been received earlier in the year from the Sierra Nevada, indicating that activity of this insect is widespread this season. As a rule this moth causes little damage, but it would be well to examine the Mill Creek-Lake Pillsbury area next fall to see if a more serious infestation is in prospect.

No bark beetle infestation has taken place yet in the Boyd burn. A number of trees were badly scorched, however, and will probably be attacked by insects early this year.

Discussion

Each of these infestations occurs in valuable timber. The Letts Valley site is a proposed recreation area, and the Goat Mtn. outbreak is in an area that was pruned in 1956 for the production of superior quality timber. As a matter of fact, a number of the currently infested trees had been pruned. The Mill Creek area was scheduled for stand improvement (thinning and pruning) this winter, but the appearance of insect activity caused a suspension of the plans.

The heavy broods and groupwise loss pattern in the three current outbreak areas are characteristic of aggressive infestations. Unless control is undertaken before the beetles emerge, probably sometime in early May, the potential exists for a sizeable increase in the number of dead trees. This is especially true this year, following a relatively warm, dry winter and spring.

The Boyd fire presents a different sort of problem, in that insects are not yet involved. It can be expected that they will attack in May, however, and some loss outside the burn might eventually result. A number of the trees here are of a size that makes for profitable logging, and it is suggested that plans for salvage be pushed so that the scorched trees are removed from the woods no later than midsummer, at the latest, before the first generation of western pine beetles will have had a chance to emerge. If the logging is done before early summer, bluestain should also be minimized. There may still be some residual infestation next year even if the merchantable trees are removed, but the potential for serious losses will be greatly reduced.

The current infestations of pine bark beetles discussed in this report illustrate the insect hazard attendant to pine slash. In some years very few beetle attacks will result from slash created in the spring, but usually some top-killing will occur, particularly in years of deficient precipitation. And, many times, as in this case, additional losses caused by the western pine beetle will take place in standing timber. Lopping and scattering slash, when logging is done during the spring hazard period, will help to minimize losses, but it is not a cure-all. Where valuable residual timber is present, slash should be checked in late spring to determine if large Ips populations have developed. If so, consideration can then be given to chemical control.